Jet Reco Efficiency and Issues

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Higgs Meeting

Introduction

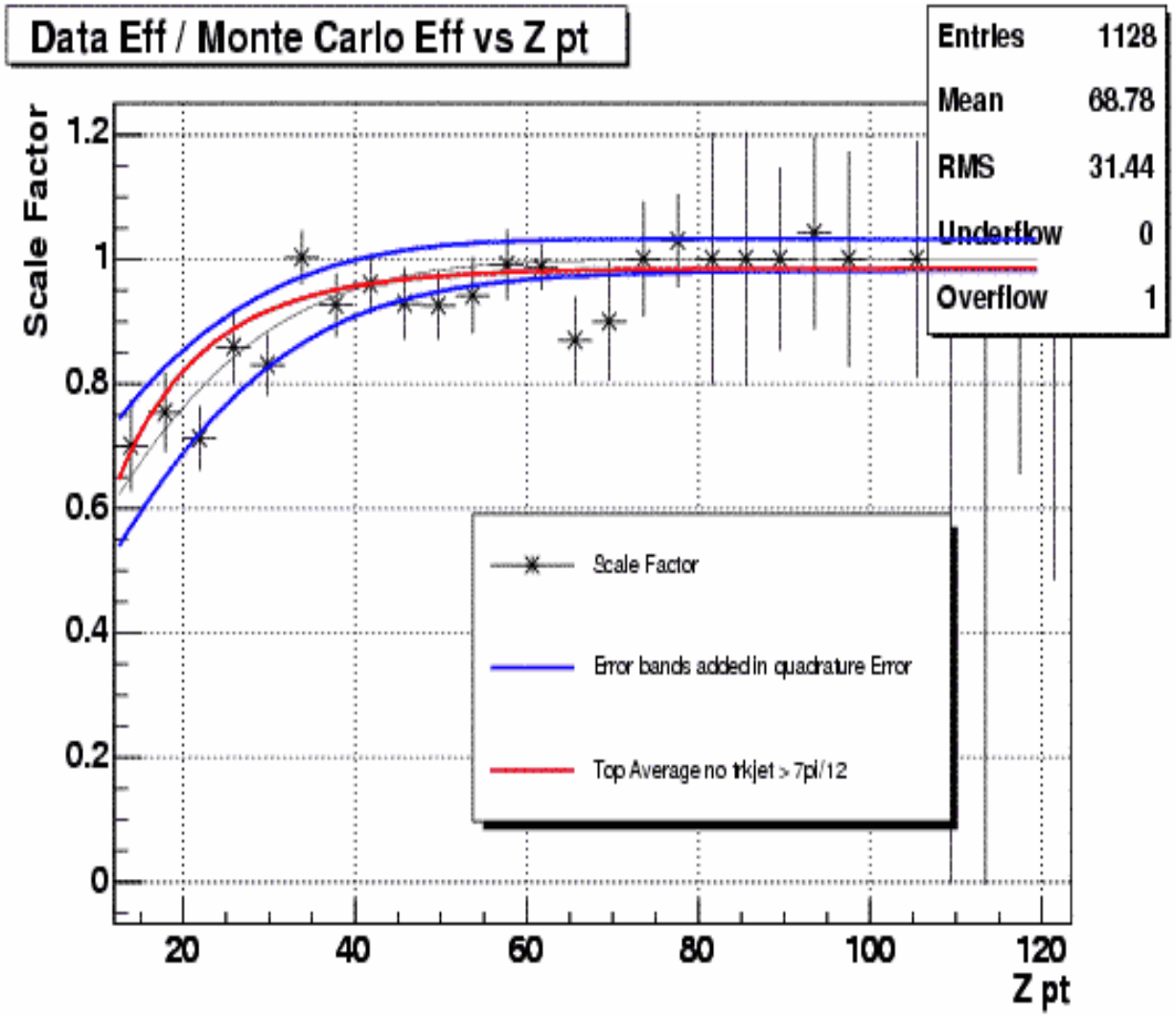
Z boson pt balance - generate a scale factor

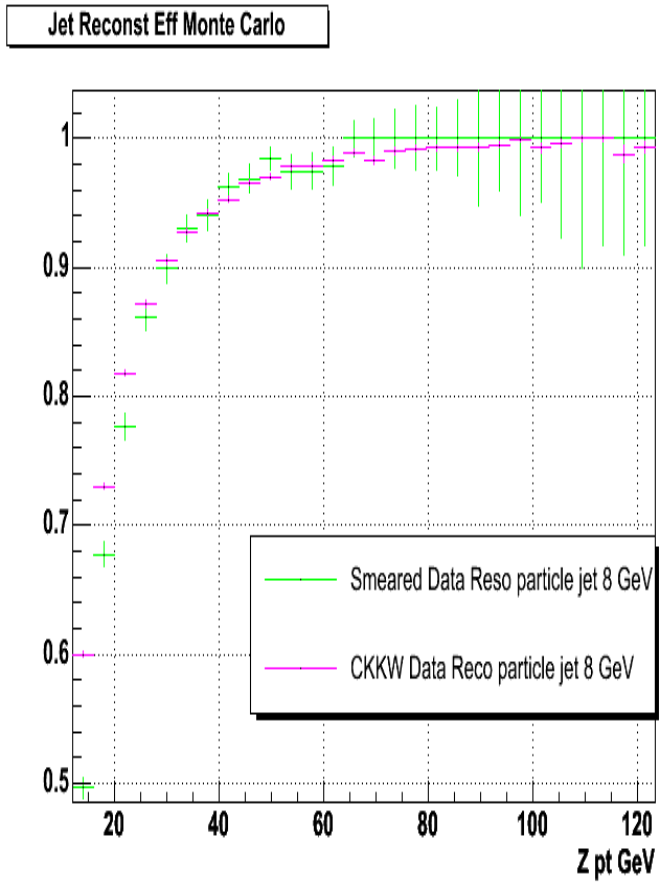
$\Delta\Phi > 7*\pi/12$

Jet Reco*ID efficiency – particle jets to calorimeter jets

$\Delta R < 0.40$

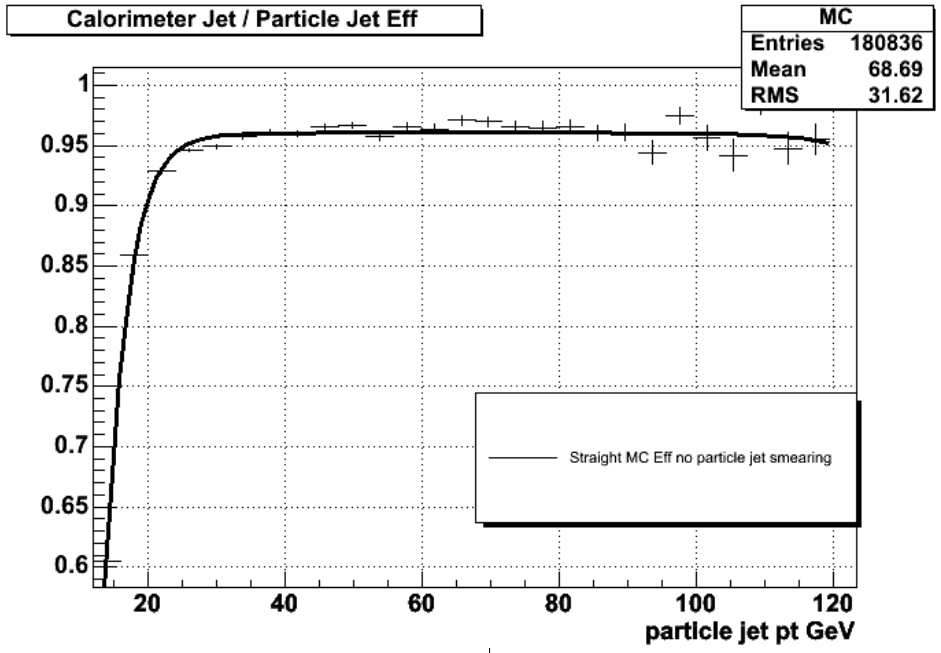
Generating the scale factor Z pt method

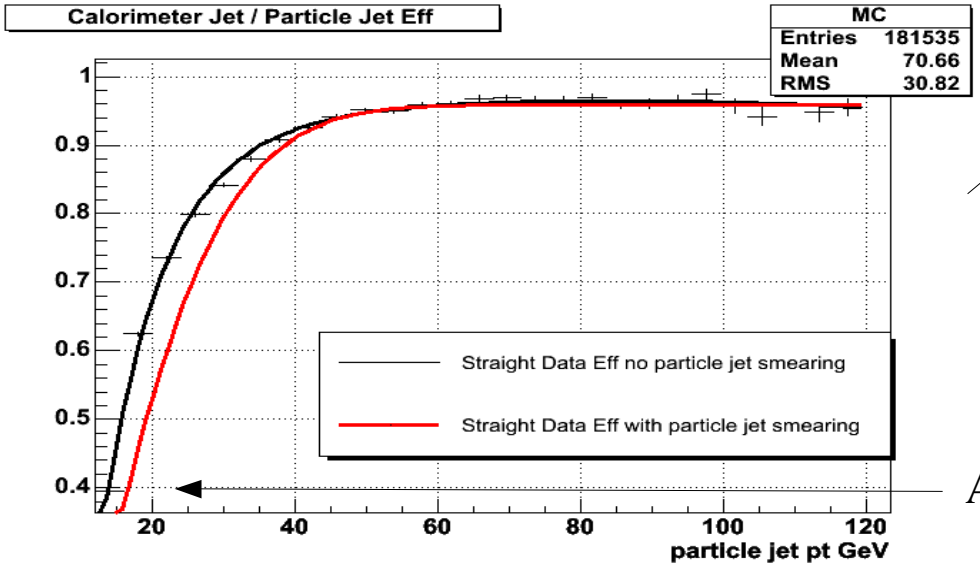


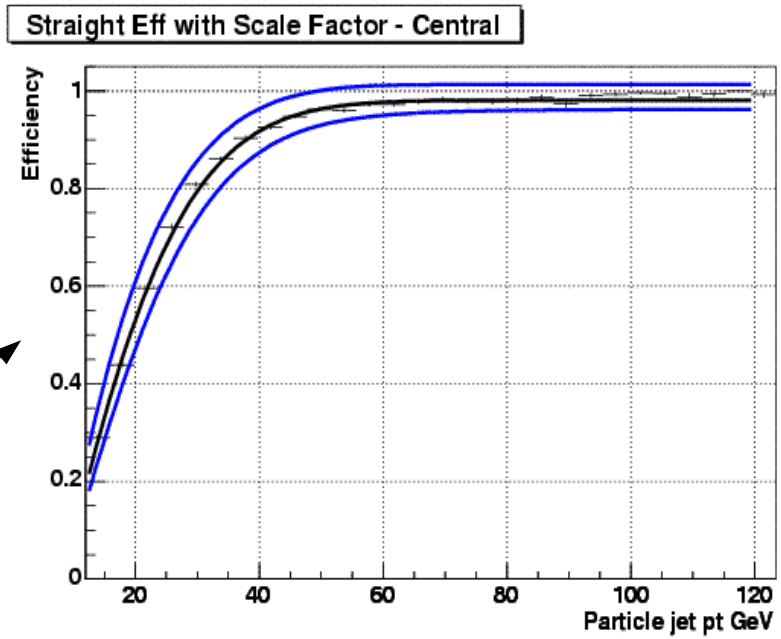


Sources of error – statistical and Missing Et

Jet Reco Efficiencies



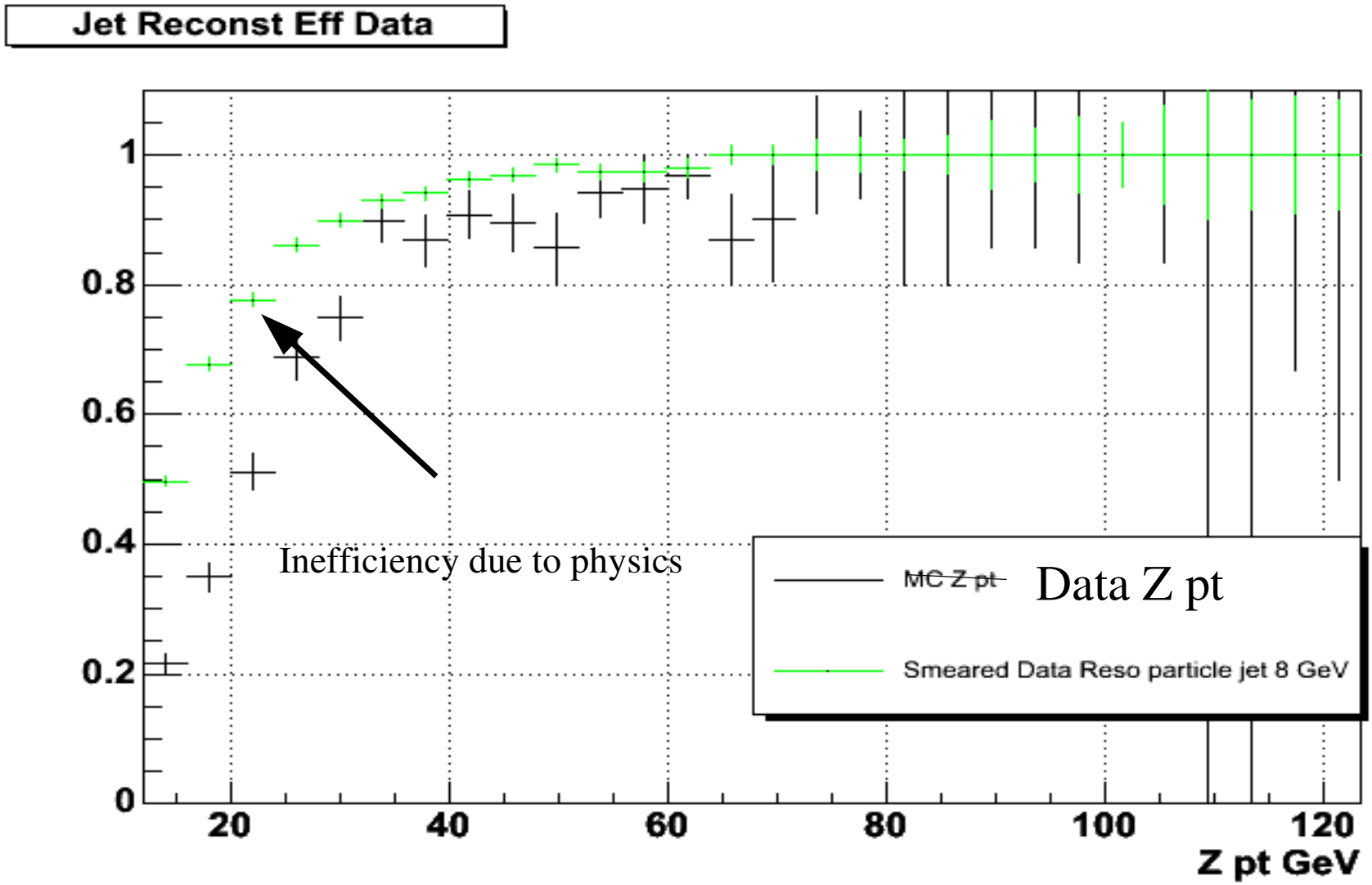




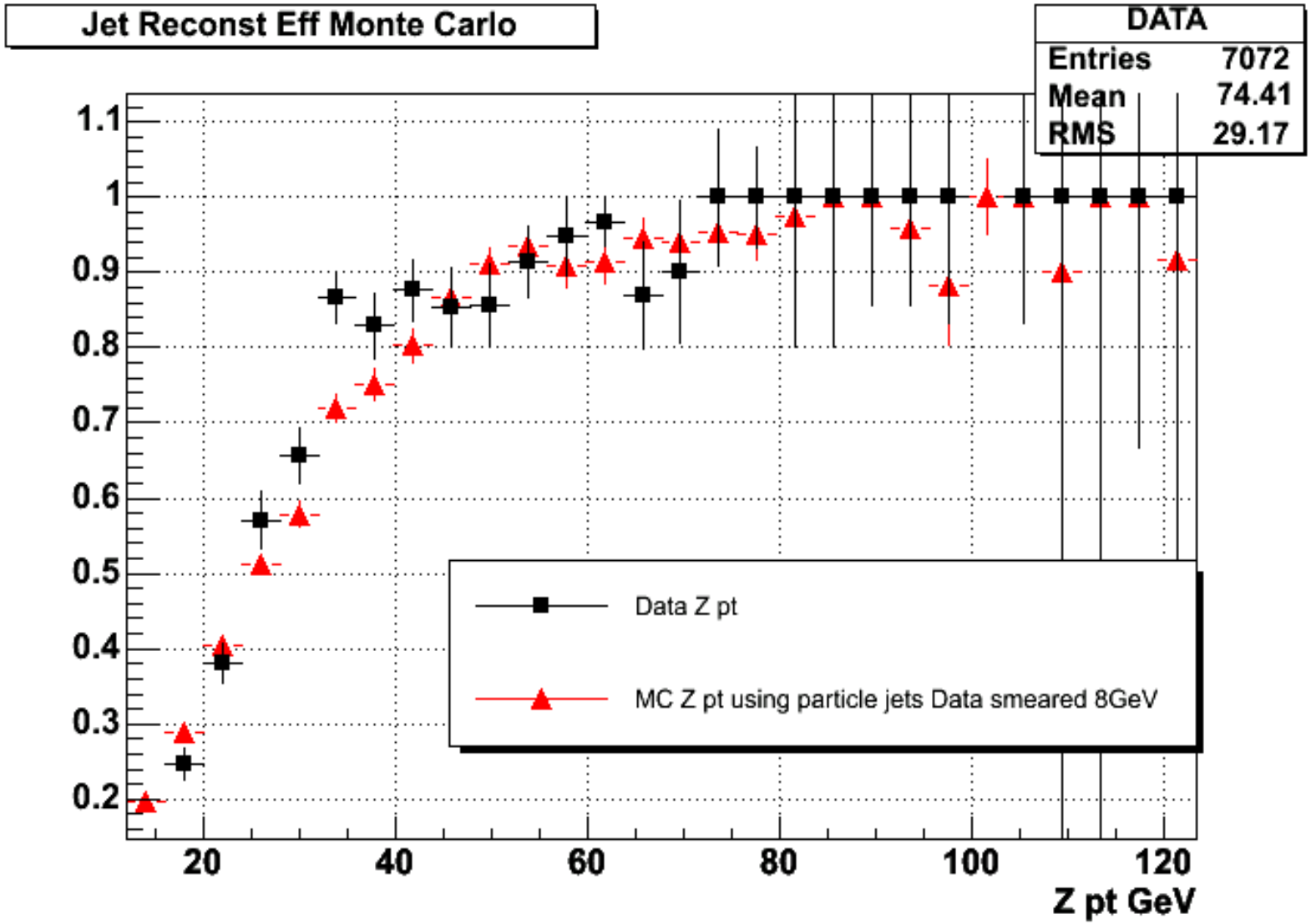
At 22 GeV 0.73 – 0.60 = 0.13

Closure – MC Z pt particle jet 8 GeV

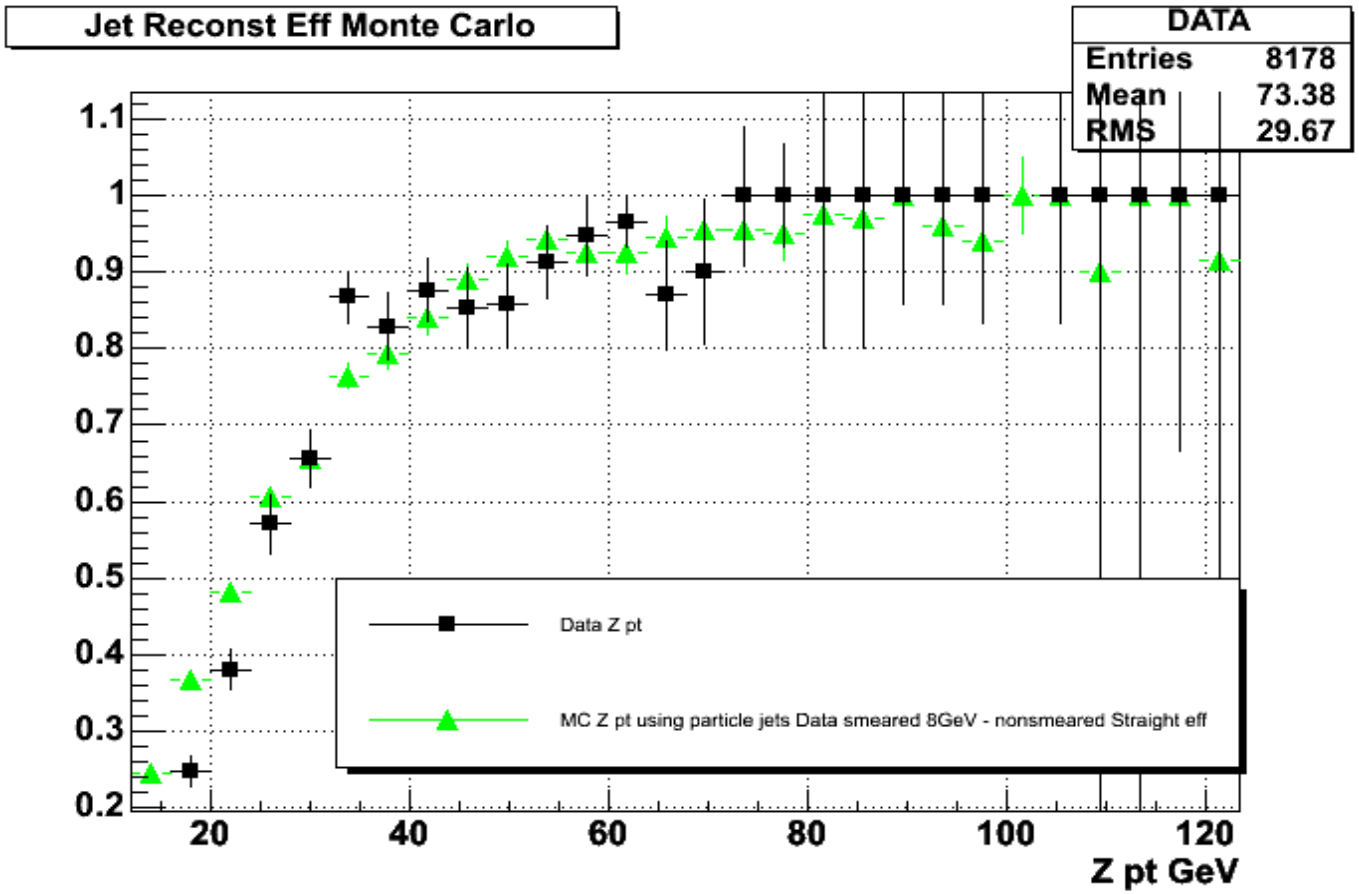
difference should only be due to jet reco eff



MC Particle Jet Smeared 8 GeV using random number and straight data eff



MC Z pt particle Jet pt smeared 8 GeV using unsmeared straight data eff



At 22 GeV
0.48 – 0.38 = 0.10

from slide 4 - 0.13

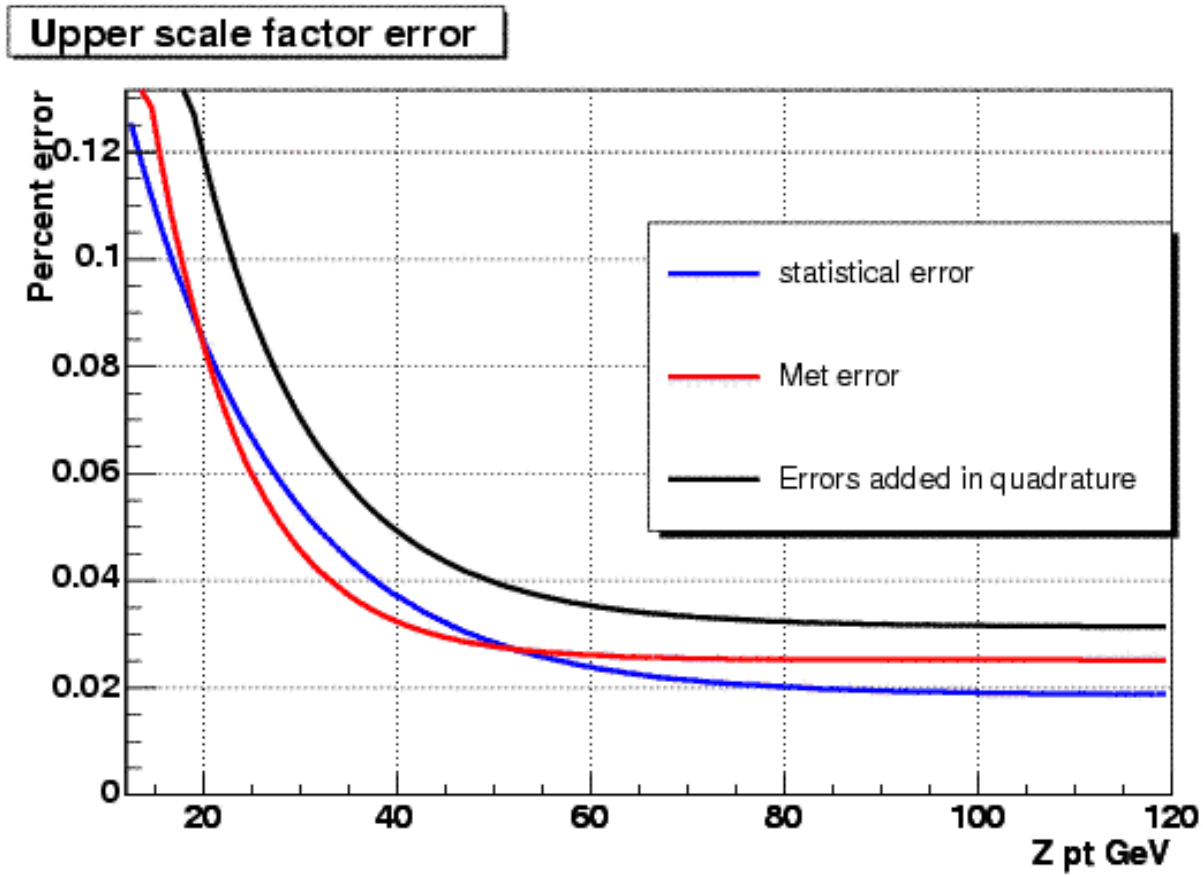
Conclusion

The closure plot gives validity to the calculated straight jet reconstruction efficiencies

Using the smeared particle jet reconstruction efficiency gives us better closure at 20.0 GeV

Support slides

Scale Factor Errors



MC Z pt - matched using particle jets